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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,421	12/31/2003	Yan Zhou	75622P006401	4633
22503	7590	09/27/2005	EXAMINER	
DAVIS & ASSOCIATES P.O. BOX 1093 DRIPPING SPRINGS, TX 78620			SINGH, RAMNANDAN P	
			ART UNIT	PAPER NUMBER
			2646	

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/750,421	Applicant(s) ZHOU, YAN	
	Examiner Ramnandan Singh	Art Unit 2646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-22 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-22 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1-3, 4A and 4B should be designated by a legend such as --Prior Art-- because only those which are old are illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 9-17, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hjartarson et al [US 6,295,343 B1] in view of Zhou [US 5,452,345].

Regarding claim 1, Hjartarson et al teach a subscriber line interface circuit apparatus shown in Fig. 8, comprising:

a first driver [Fig. 8] for driving a upstream data signal in a non-voiceband range

[Fig. 1a)) ;

a second driver [Fig. 8] for driving a upstream voice signal in a voiceband range [Fig. 1a] onto the subscriber line; and

receiver circuitry [Fig. 8] comprised of a feed resistor (418) coupled to provide an upstream data signal and an upstream voice signal from an upstream signal carried by the subscriber line [Figs. 6-9; col. 6, lines 17-24];

wherein the first driver and receiver circuitry reside on a same integrated circuit (i.e. integrated line card 400) [Fig. 4; col.5, lines 31-44; col. 7, lines 36-55].

Hjartarson et al do not teach explicitly providing a driver for driving a metering signal onto a subscriber line.

Zhou et al teach using a metering signal generator to provide a metering signal to the downstream path and upstream path [col. 2, lines 45-68]. It may , however, be noted that this is a teaching to one of ordinary skill in the art to apply the same to other applications.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Zhou et al with Hjartarson et al in order to provide a metering signal to continuously notify a customer of telephone charges, etc. [Zhou et al; col. 1, lines 12-16].

Further, although Hjartarson et al teach the subscriber line interface comprising a first driver for driving an upstream data signal and a second driver for driving an upstream voice signal [Fig. 8], it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to do the same thing with a downstream data signal and a downstream voice signal to reside on a second integrated circuit as claimed in order to make the communication system full-duplex.

Claim 12 is essentially similar to claim 1 and is rejected for the reasons stated above.

Regarding claim 2, Hjartarson et al teach the apparatus, comprising:
an upstream low pass filter providing a low pass filtered upstream signal as an upstream voice signal (406), wherein the upstream low pass filter embedded within the second driver resides on the first integrated circuit [Fig. 8].

Claim 16 is essentially similar to claim 2 and is rejected for the reasons stated above.

Regarding claims 3 and 17, the limitations are shown above.

Regarding claim 4, Hjartarson et al further teach the apparatus, wherein the voiceband range is from approximately 300 Hz to 4 kHz [Fig. 1a].

Claim 13 is essentially similar to claim 4 and is rejected for the reasons stated above.

Regarding claim 5, Hjartarson et al further teach the apparatus, comprising:
an upstream high pass filter providing a high pass filtered upstream signal as an upstream voice signal (408), wherein the upstream high pass filter embedded within the second driver resides on the first integrated circuit [Fig. 8].

Regarding claim 6, the limitations are shown above.

Regarding claim 9, Hjartarson et al further teach the apparatus, wherein the voice and data signals are weight coupled to the driver using an impedance generator (424) in combination with LPF (422), wherein the weights permit varying the ratio of the downstream voice signal to the downstream data signal [Fig. 6].

Regarding claim 10, Hjartarson et al further teach the apparatus wherein a lower bound of the non-voiceband range is greater than 16 kHz [Fig. 1a].

Claim 14 is essentially similar to claim 10 and is rejected for the reasons stated above.

Regarding claim 11, Hjartarson et al further teach the apparatus wherein the downstream data signal is a discrete multi-tone encoded signal [col. 1, lines 38-56].

Claim 15 is essentially similar to claim 11 and is rejected for the reasons stated above.

Regarding claim 20, Hjartarson et al further teach the apparatus, wherein the receiver circuitry comprised of a feed resistor (418) comprises a first upstream driver coupled to receive the upstream signal [Fig. 8].

4. Claims 7-8 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hjartarson et al and Zhou et al as applied to claims 7 and 13 respectively above, and further in view of Booth et al [US 5,835,533].

Regarding claim 7, the combination of Hjartarson et al and Zhou et al does not teach explicitly a metering signal cancellation circuit.

Booth et al teach a metering signal cancellation circuit (i.e. adaptive filter) shown in Fig. 7, wherein the metering signal cancellation circuit substantially cancels any metering signal present in the upstream voice signal [Fig. 7; col. 1, lines 11-49; col. 7, lines 21-55].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine Booth et al with the combination of Zhou et al and Hjartarson et al in order to accommodate signals in the upstream direction so that the network can then serve for communication metering signals [Booth et al; col. 1, lines 29-35].

Claim 18 is essentially similar to claim 7 and is rejected for the reasons stated above.

Regarding claim 8, Booth et al teach the apparatus, wherein the metering signal cancellation circuit further comprises a finite impulse response filter responsive to the metering signal provided to the driver circuitry [Fig. 7; col. 7, lines 21-35].

Claim 19 is essentially similar to claim 8 and is rejected for the reasons stated above.

5. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hjartarson et al and Zhou et al as applied to claim 20 above, and further in view of Gambuzza [US 6,226,331 B1].

Regarding claim 21, Hjartarson et al do not teach the apparatus, wherein the first upstream driver is capacitor-coupled to the subscriber line.

Gambuzza teaches the apparatus shown in Fig. 4, wherein the first upstream driver is capacitor-coupled to the subscriber line [Fig. 4; col. 7, line 15 to col. 8, line 7]. It is nevertheless a teaching to one of ordinary skill in the art.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Gambuzza with Hjartarson et al in order to provide galvanic isolation between data communications equipment and a digital subscriber line (DSL) [Gambuzza; col. 1, lines 19-24].

Regarding claim 22, Gambuzza teaches the apparatus, wherein the first upstream driver (220) shown in Fig. 2 is transformer-coupled to the subscriber line [Fig. 2].

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramnandan Singh
Examiner
Art Unit 2646

A handwritten signature in black ink, appearing to be 'RNS', with a long horizontal stroke extending to the right.A handwritten signature in black ink, appearing to be 'Sinh Tran', with a long horizontal stroke extending to the right.

SINH TRAN
SUPERVISORY PATENT EXAMINER